

Claims

1. A wireless subscriber terminal comprising a diversity antenna arrangement and a receive path including signal assessment means, a combiner switches and control means; wherein, in operation, receive signals are switched in and out of the received path to provide a test combination of received diversity signals for a finite period on a fast switching basis; wherein, subsequent to an initial selection of receive diversity signals, improvement for a test combination of receive diversity signals is determined by incremental signal quality; wherein, upon determination of an incremental signal quality for said test combination of receive diversity signals are switched into the receive path and under the control of the control means.
2. A wireless subscriber unit receiver according to claim 1 wherein further receive signals are selected only when such signals contribute to the carrier to noise ratio.
3. A wireless receiver according to claim 1 wherein the antennas of the subscriber station are separated by distance, whereby spatial diversity is employed to differentiate signals.
4. A wireless receiver according to claim 1 wherein the antennas of the subscriber station have a different polarisation, whereby polarisation diversity is employed to differentiate signals.
5. A wireless receiver according to claim 1 wherein the antennas of the subscriber station incorporates both spatial and polarisation diversity.
6. A wireless receiver according to claim 1, wherein Hysteresis is employed to prevent rapid switching.
7. A wireless receiver according to claim 1, wherein a rake receiver is employed to combine signals which are spatially separated.
8. A wireless receiver according to claim 1, wherein there are N diverse receive paths where $(N > 2)$ and wherein there are n receive paths (where $n =$

N-1) each having delay means operable to delay the n signals with respect to each other by a period τ , corresponding to the chip rate.

5 9. A wireless receiver according to claim 1 wherein there are two diverse receive paths and one receive path is provided with a delay means operable to delay signals in the receive path by a period τ , corresponding to the chip rate and wherein MLSE demodulation techniques are employed.

10 10. A wireless receiver according to claim 1 wherein a rake receiver is employed to combine signals which are spatially separated, and wherein, the multi-path metric can be set so that only one antenna is employed.

15 11. A method of operating a wireless subscriber terminal comprising a diversity antenna arrangement and a receive path including signal assessment means, a combiner, switches and control means; wherein diverse signals received from the antenna arrangement are switched in and out of the receive path to provide a test combination of receive diversity signals for a finite period on a fast switching basis; wherein, upon determination of an increment signal quality for said test combination of receive diversity signals, relative to a previous signal quality, said test combination receive diversity signals are
20 switched into the receive path under the control of the control means; wherein, upon determination of no variance in signal quality relative to a previous signal quality, then the prior combination of receive diversity signals is maintained.

25 12. A method according to claim 11 wherein further receive signals are selected only when such signals contribute to the carrier to noise ratio.

30 13. A method according to claim 11 wherein the antennas of the subscriber station are separated by distance, whereby spatial diversity is employed to differentiate signals.

35 14. A method according to claim 11 wherein the antennas of the subscriber station have a different polarisation, whereby polarisation diversity is employed to differentiate signals.

15. A method according to claim 11 wherein the antennas of the subscriber station incorporates both spatial and polarisation diversity.

16. A method according to claim 11, wherein Hysteresis is employed to prevent rapid switching.
- 5 17. A method according to claim 11, wherein a rake receiver is employed to combine signals which are spatially separated.
18. A method according to claim 11, wherein there are N diverse receive paths where ($N > 2$) and wherein N receive paths (where $N=1$) each having
- 10 delay means operable to delay the N signals with respect to each other by a period τ , corresponding to the chip rate.
19. A method according to claim 11, wherein there are two diverse receive paths and one receive path is provided with a delay means operable to delay
- 15 signals in the receive path by a period τ , corresponding to the chip rate and wherein MLSE demodulation techniques are employed.
20. A method according to claim 11, wherein a rake receiver is employed to combine signals which are spatially separated, and wherein, the multi-path
- 20 metric can be set so that only one antenna is employed.
21. A fixed wireless access subscriber arrangement including a receiver as described in claim 1.
- 25 22. A method according to claim 11 wherein the wireless subscriber terminal is a fixed wireless subscriber terminal.

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